FIG. 1

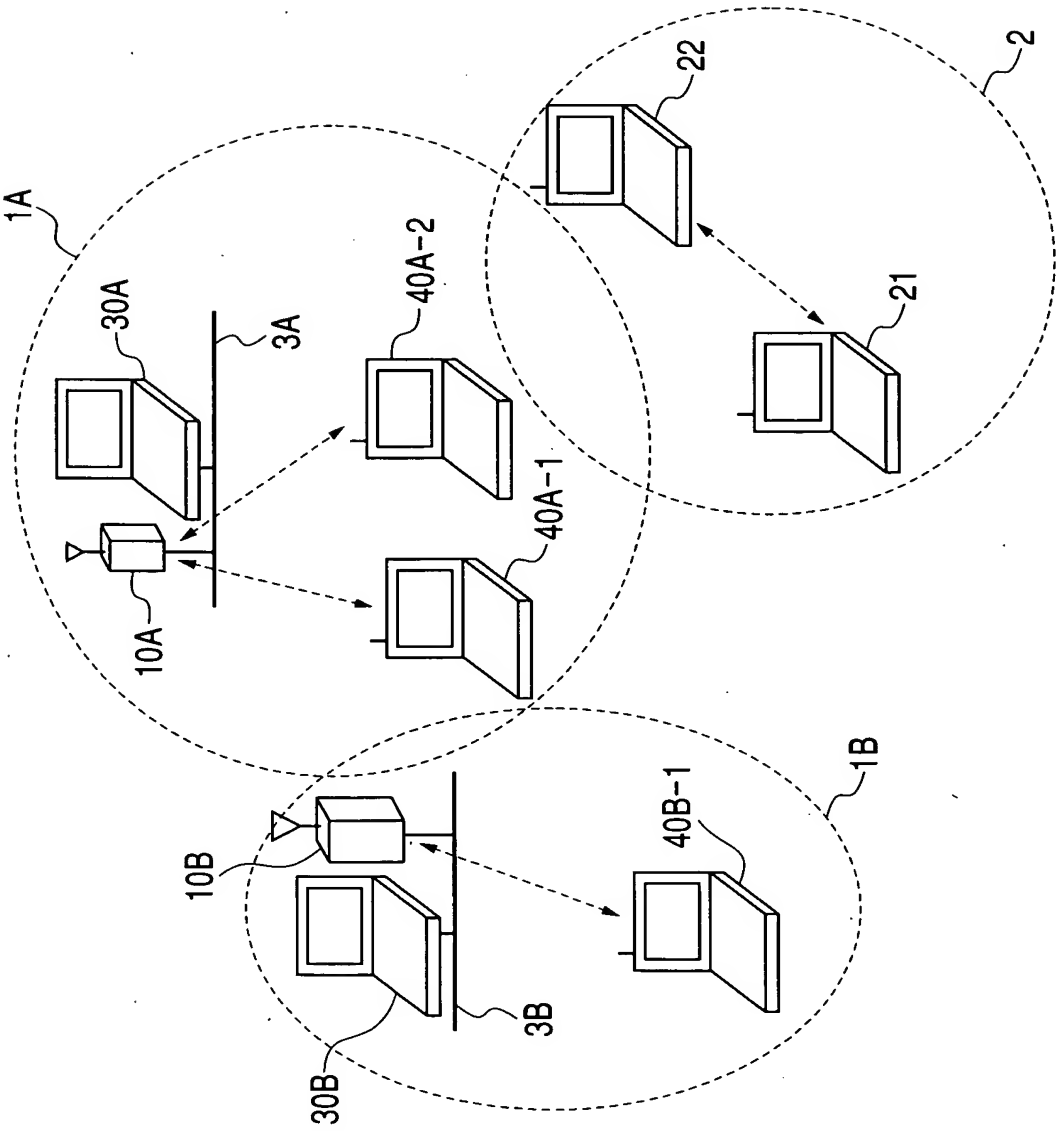


FIG. 2

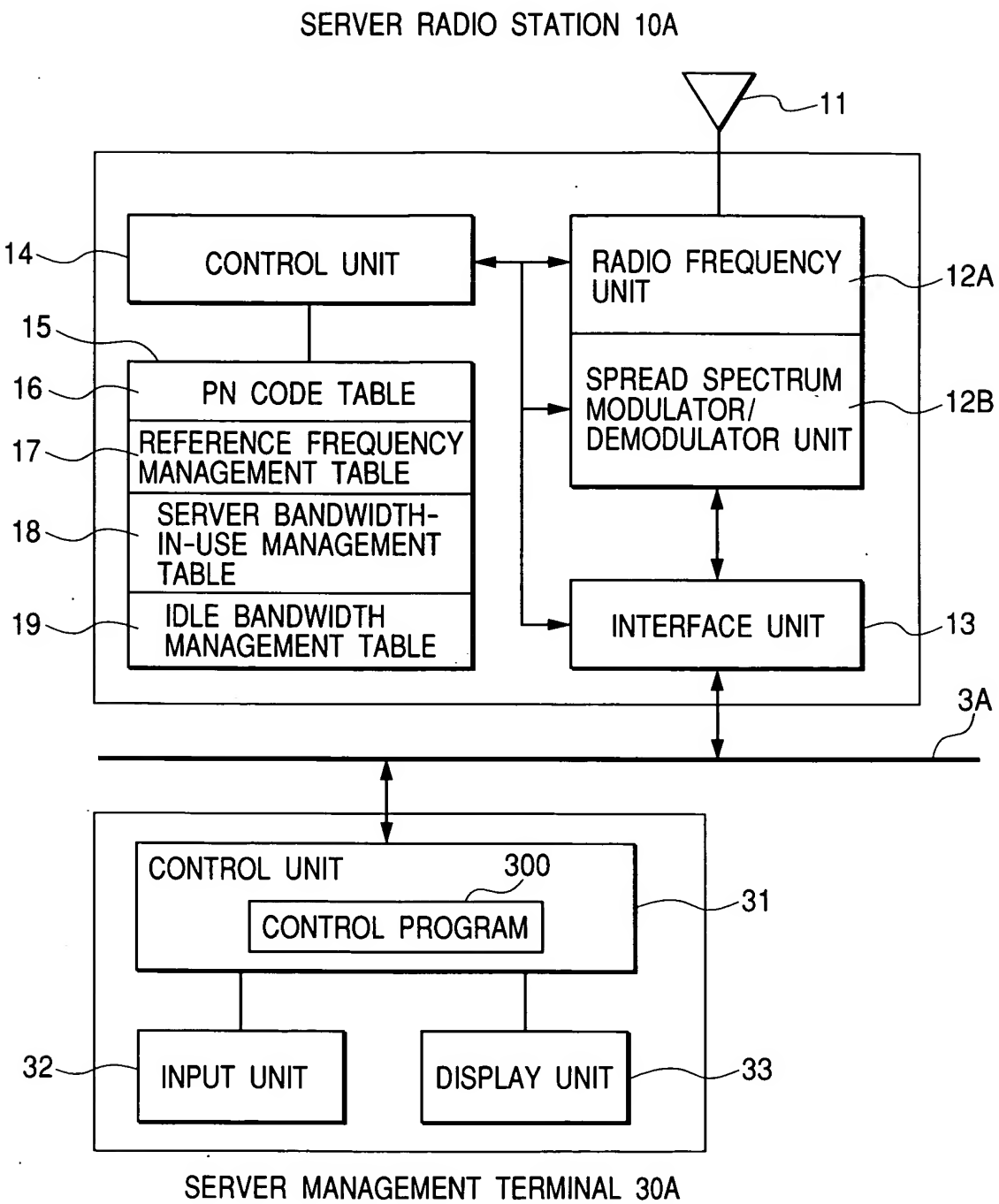

SERVER RADIO STATION 10A
11
14
CONTROL UNIT
RADIO FREQUENCY UNIT
12A
15
16
PN CODE TABLE
17
REFERENCE FREQUENCY MANAGEMENT TABLE
18
SERVER BANDWIDTH-IN-USE MANAGEMENT TABLE
19
IDLE BANDWIDTH MANAGEMENT TABLE
SPREAD SPECTRUM MODULATOR/ DEMODULATOR UNIT
12B
INTERFACE UNIT
13
3A
CONTROL UNIT
300
CONTROL PROGRAM
31
32
INPUT UNIT
DISPLAY UNIT
33
SERVER MANAGEMENT TERMINAL 30A

FIG. 3

REFERENCE FREQUENCY TABLE 17

171 ENTRY NUMBER	172 REFERENCE FREQUENCY	173 USE SITUATION
0	fb0	1
1	fb1	1
2	fb2	0
⋮	⋮	⋮
m	fbm	0

FIG. 4

SERVER BANDWIDTH-IN-USE MANAGEMENT TABLE 18

181 ENTRY NUMBER	182 SERVER RADIO STATION ID	183 MAIN FREQUENCY	184 OCCUPIED BANDWIDTH	185 POSSIBILITY OF OCCUPIED BANDWIDTH CHANGE
1	id1	fb2	WM	1
2	id2	fb8	WH	0
3	id3	fbm	WL	0
⋮	⋮	⋮	⋮	⋮

FIG. 5

IDLE BANDWIDTH MANAGEMENT TABLE 19

191 ENTRY NUMBER	192 REFERENCE FREQUENCY	193 IDLE BANDWIDTH
1	fb0～fb10	Wx1
2	fb15～fb25	Wx2
⋮	⋮	⋮

FIG. 6

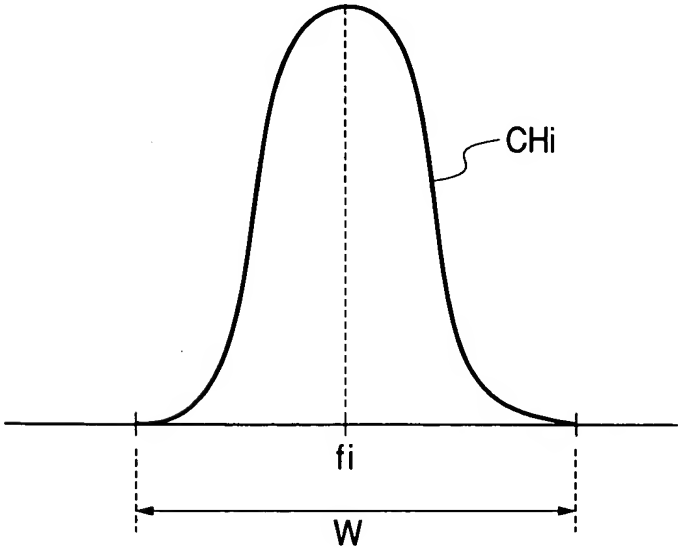


FIG. 7

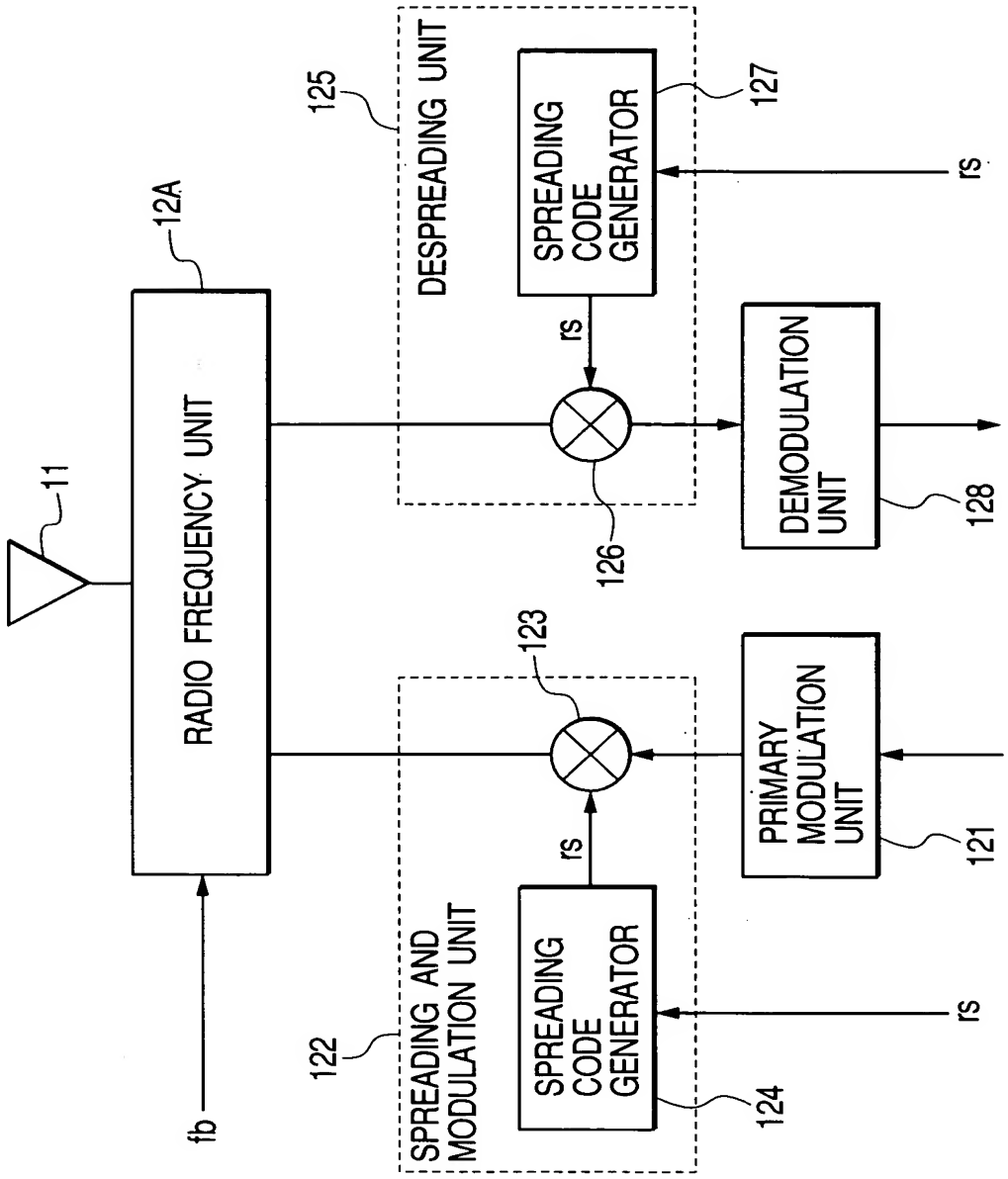

11
12A
RADIO FREQUENCY UNIT
fb
125
DESPREADING UNIT
SPREADING CODE GENERATOR
127
rs
rs
126
DEMODULATION UNIT
128
123
PRIMARY MODULATION UNIT
121
rs
122
SPREADING AND MODULATION UNIT
SPREADING CODE GENERATOR
rs
124

FIG. 8A

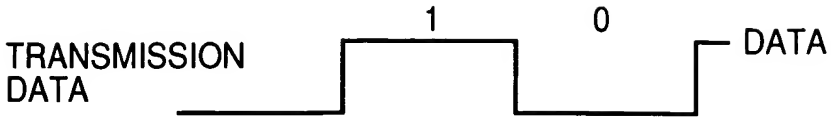


FIG. 8B

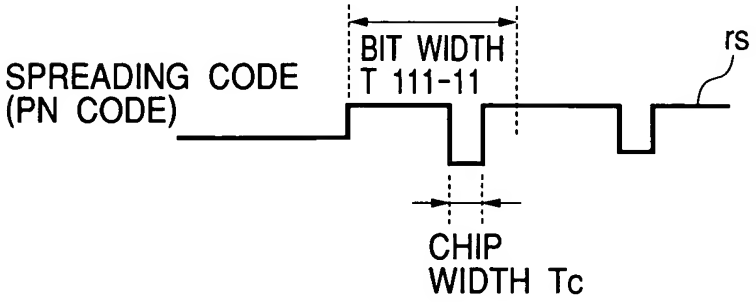


FIG. 9A

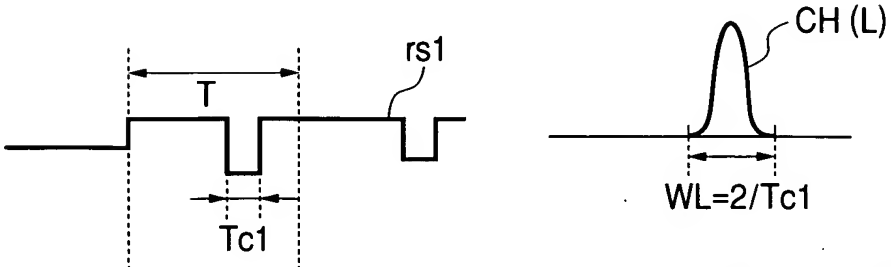


FIG. 9B

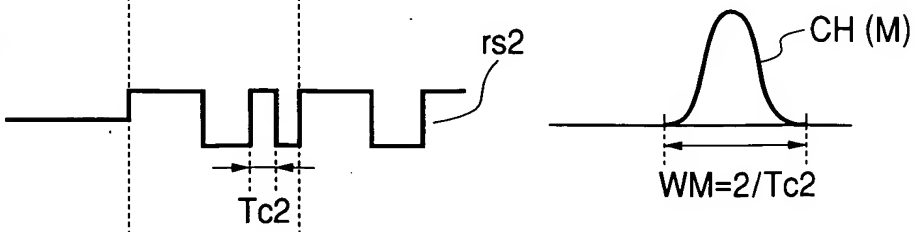


FIG. 9C

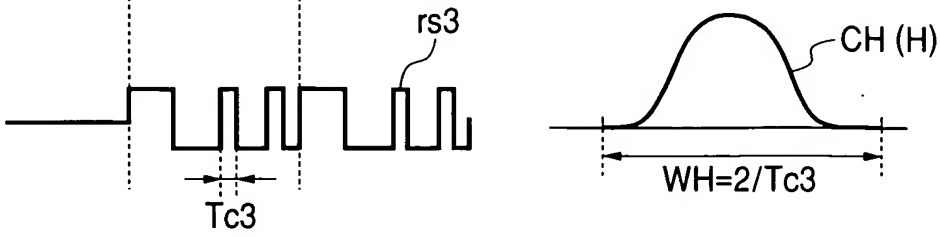


FIG. 10

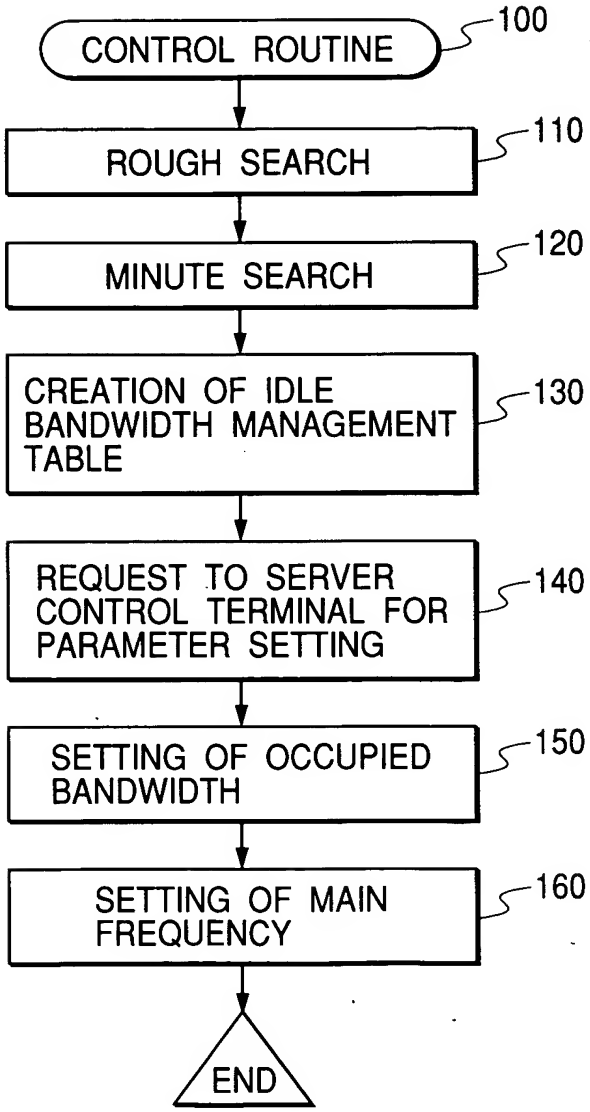

CONTROL ROUTINE
100
ROUGH SEARCH
110
MINUTE SEARCH
120
CREATION OF IDLE BANDWIDTH MANAGEMENT TABLE
130
REQUEST TO SERVER CONTROL TERMINAL FOR PARAMETER SETTING
140
SETTING OF OCCUPIED BANDWIDTH
150
SETTING OF MAIN FREQUENCY
160
END

FIG. 11

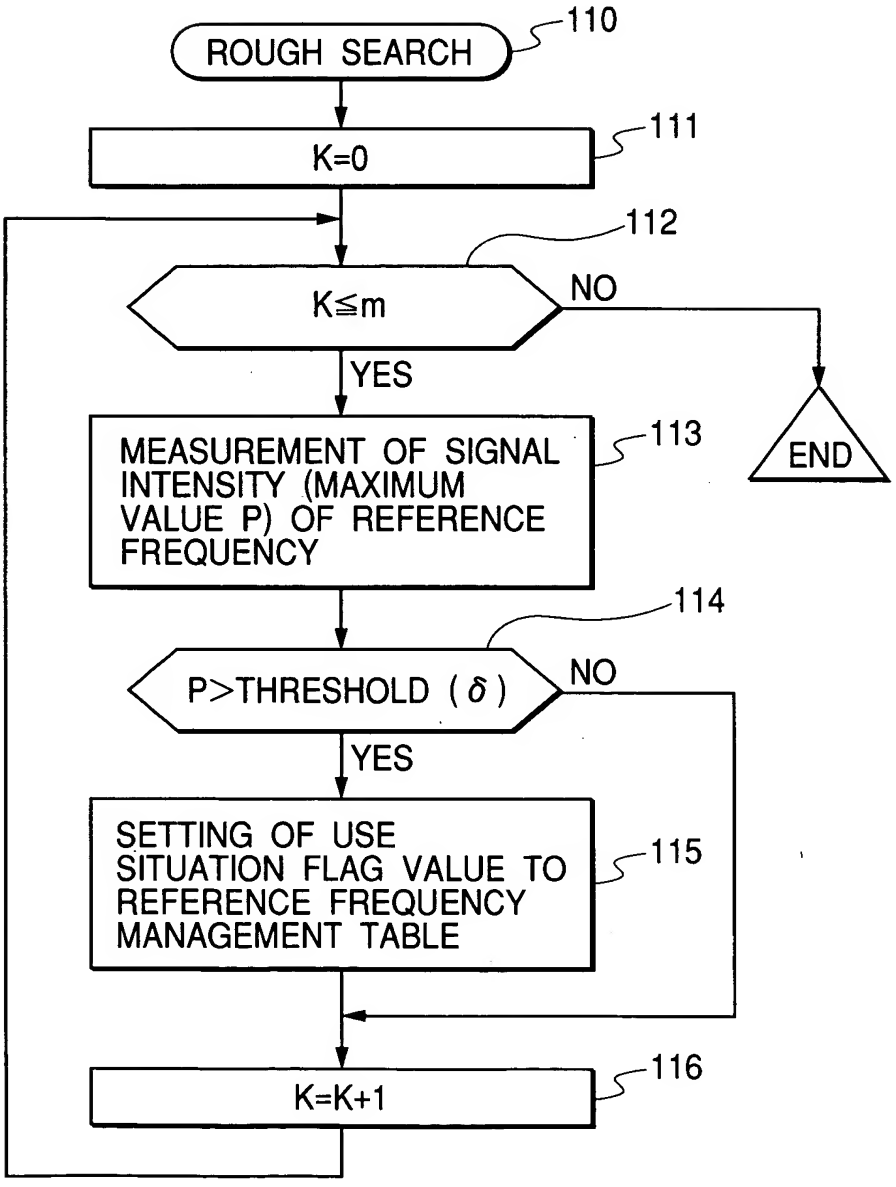

ROUGH SEARCH
110
K=0
111
K≦m
112
NO
YES
END
MEASUREMENT OF SIGNAL INTENSITY (MAXIMUM VALUE P) OF REFERENCE FREQUENCY
113
P>THRESHOLD (δ)
114
NO
YES
SETTING OF USE SITUATION FLAG VALUE TO REFERENCE FREQUENCY MANAGEMENT TABLE
115
K=K+1
116

FIG. 12

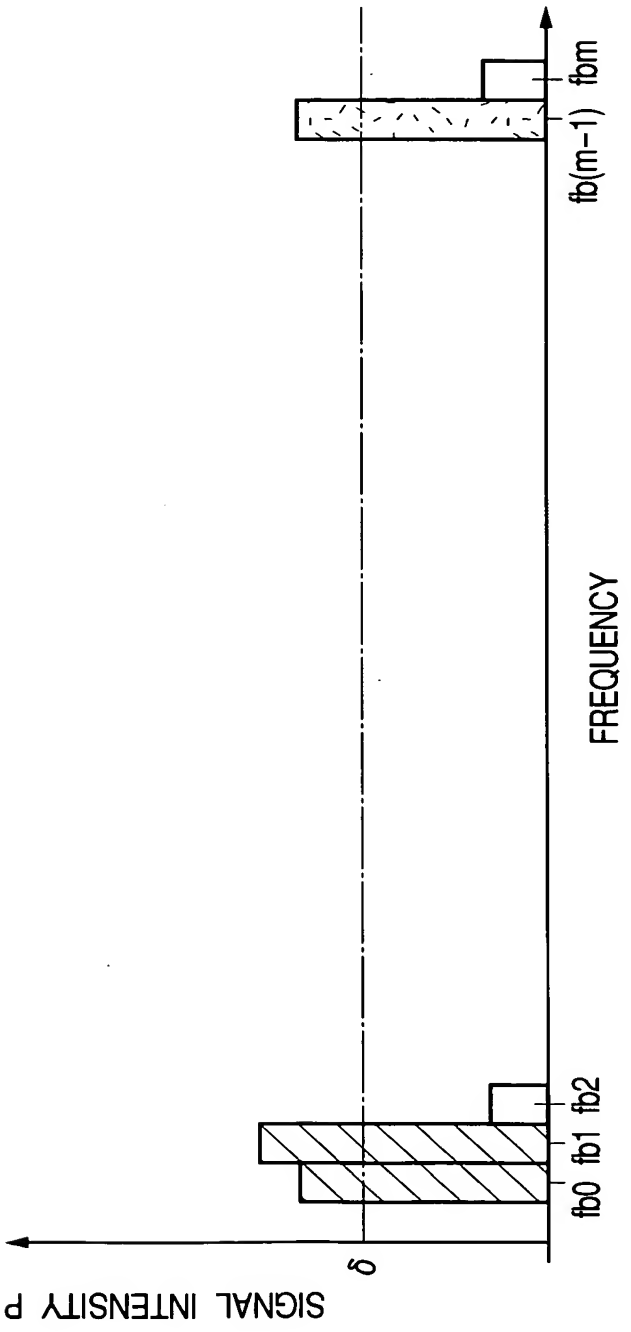


FIG. 13

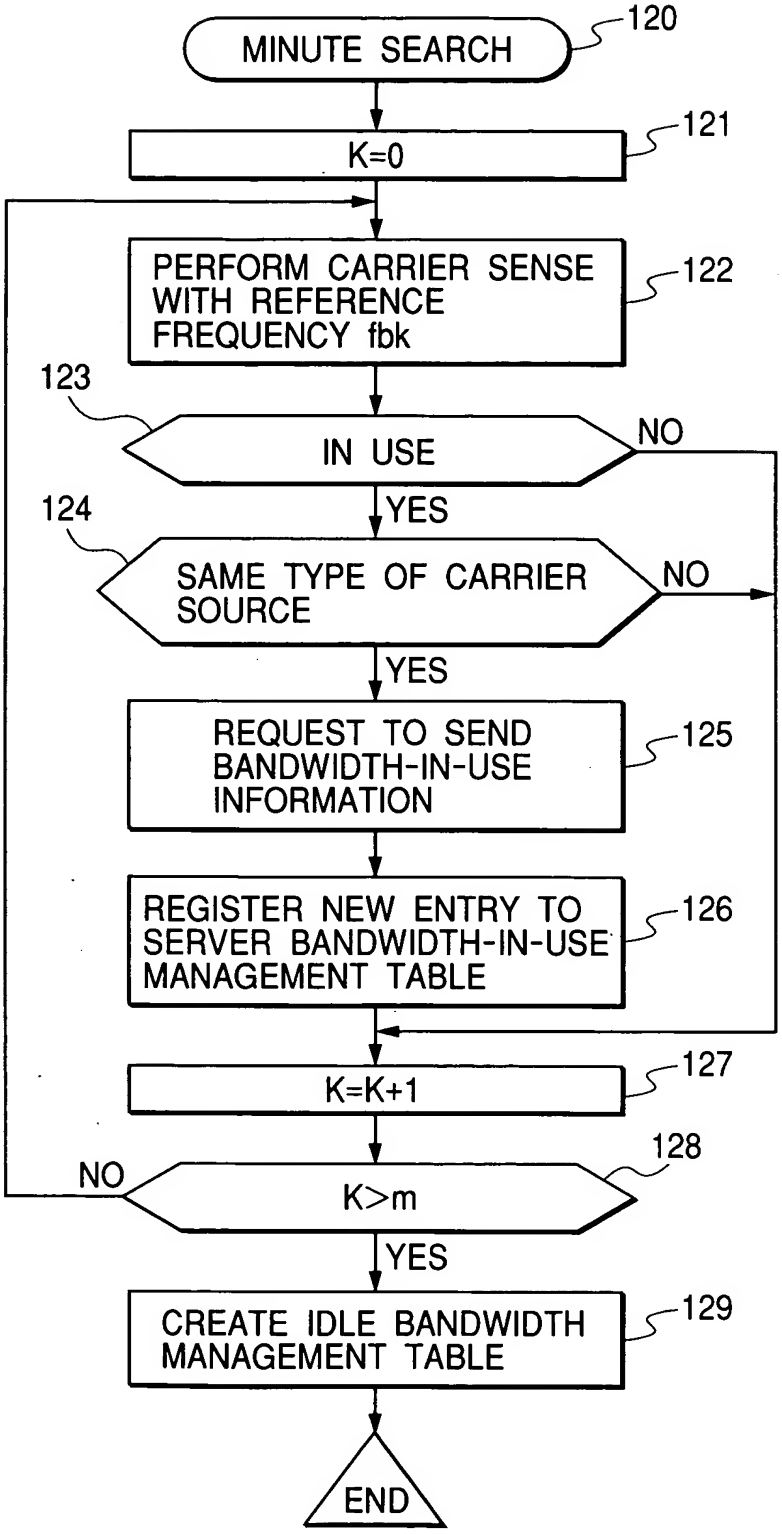

MINUTE SEARCH
120
K=0
121
PERFORM CARRIER SENSE WITH REFERENCE FREQUENCY fbk
122
123
IN USE
NO
YES
124
SAME TYPE OF CARRIER SOURCE
NO
YES
REQUEST TO SEND BANDWIDTH-IN-USE INFORMATION
125
REGISTER NEW ENTRY TO SERVER BANDWIDTH-IN-USE MANAGEMENT TABLE
126
K=K+1
127
128
NO
K>m
YES
CREATE IDLE BANDWIDTH MANAGEMENT TABLE
129
END

FIG. 14

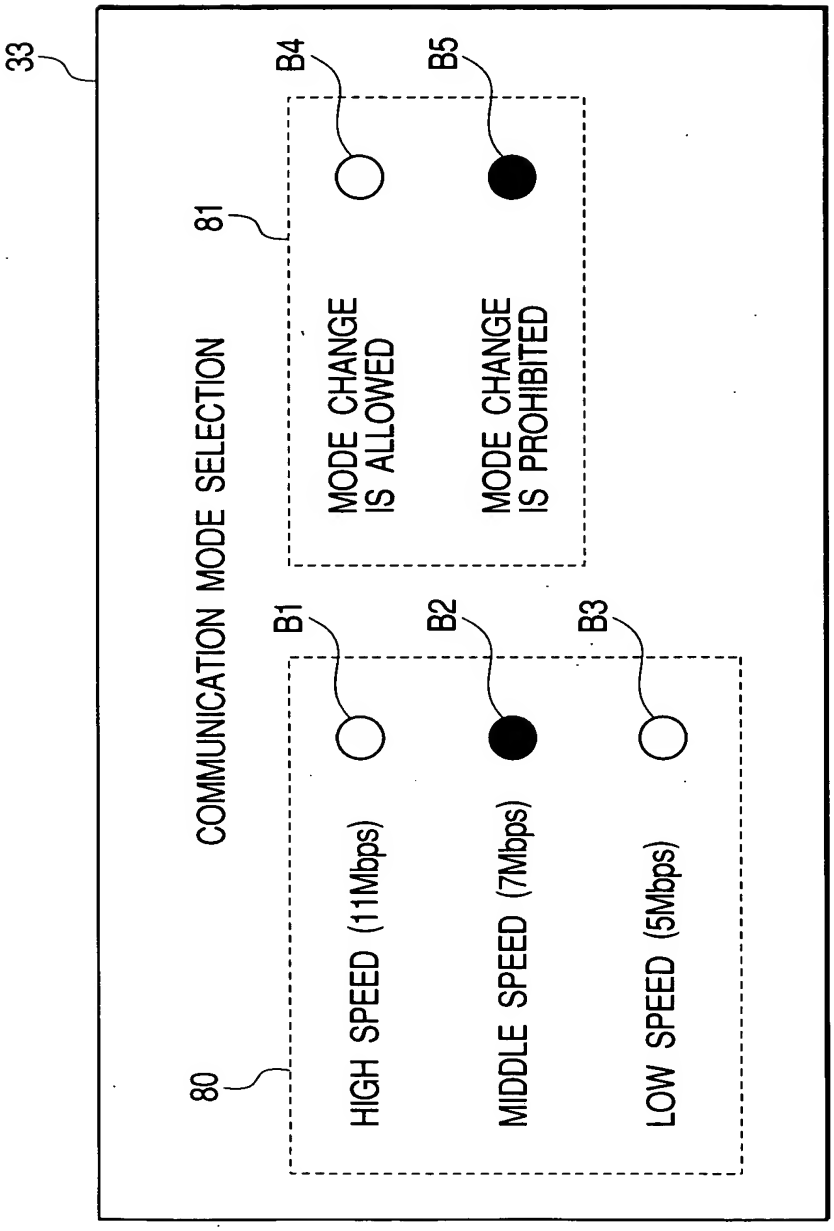

33
COMMUNICATION MODE SELECTION
81
B4
B5
MODE CHANGE IS ALLOWED
MODE CHANGE IS PROHIBITED
80
B1
B2
B3
HIGH SPEED (11Mbps)
MIDDLE SPEED (7Mbps)
LOW SPEED (5Mbps)

FIG. 15

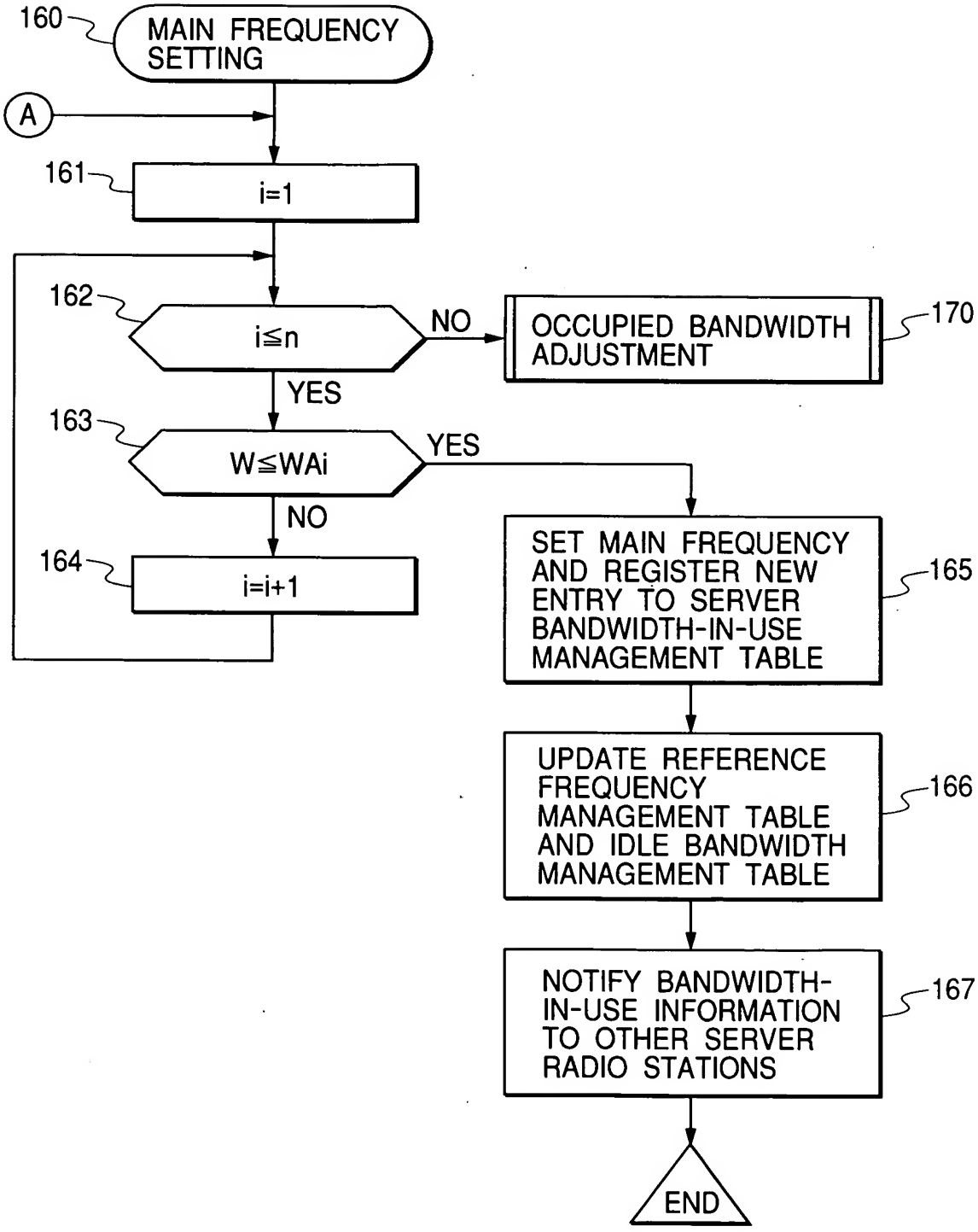

160
MAIN FREQUENCY SETTING
A
161
i=1
162
i≦n
NO
OCCUPIED BANDWIDTH ADJUSTMENT
170
YES
163
W≦WAi
YES
NO
164
i=i+1
SET MAIN FREQUENCY AND REGISTER NEW ENTRY TO SERVER BANDWIDTH-IN-USE MANAGEMENT TABLE
165
UPDATE REFERENCE FREQUENCY MANAGEMENT TABLE AND IDLE BANDWIDTH MANAGEMENT TABLE
166
NOTIFY BANDWIDTH-IN-USE INFORMATION TO OTHER SERVER RADIO STATIONS
167
END

FIG. 16

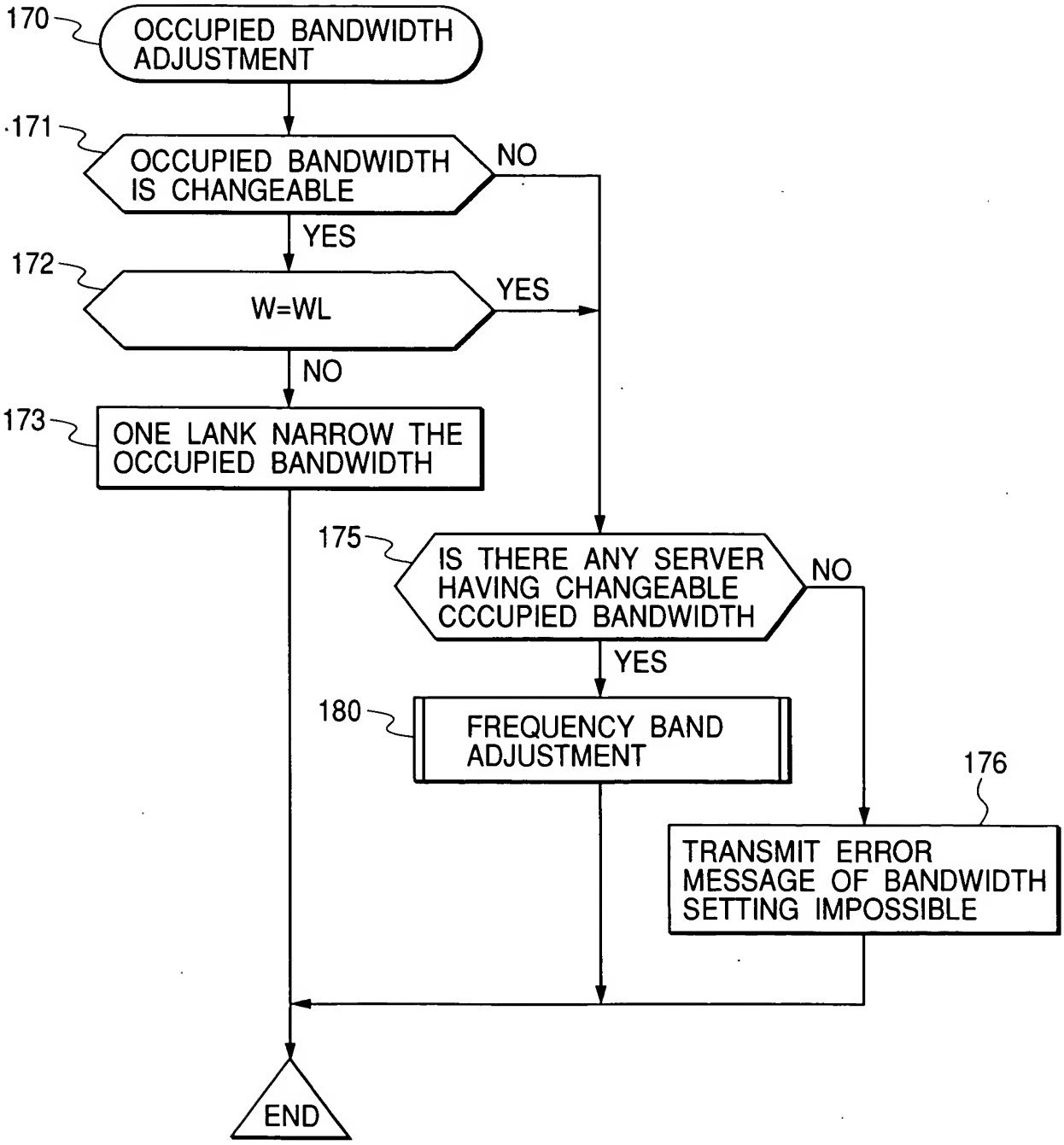

170
OCCUPIED BANDWIDTH ADJUSTMENT
171
OCCUPIED BANDWIDTH IS CHANGEABLE
NO
YES
172
W=WL
YES
NO
173
ONE LANK NARROW THE OCCUPIED BANDWIDTH
175
IS THERE ANY SERVER HAVING CHANGEABLE CCCUPIED BANDWIDTH
NO
YES
180
FREQUENCY BAND ADJUSTMENT
176
TRANSMIT ERROR MESSAGE OF BANDWIDTH SETTING IMPOSSIBLE
END

FIG. 17

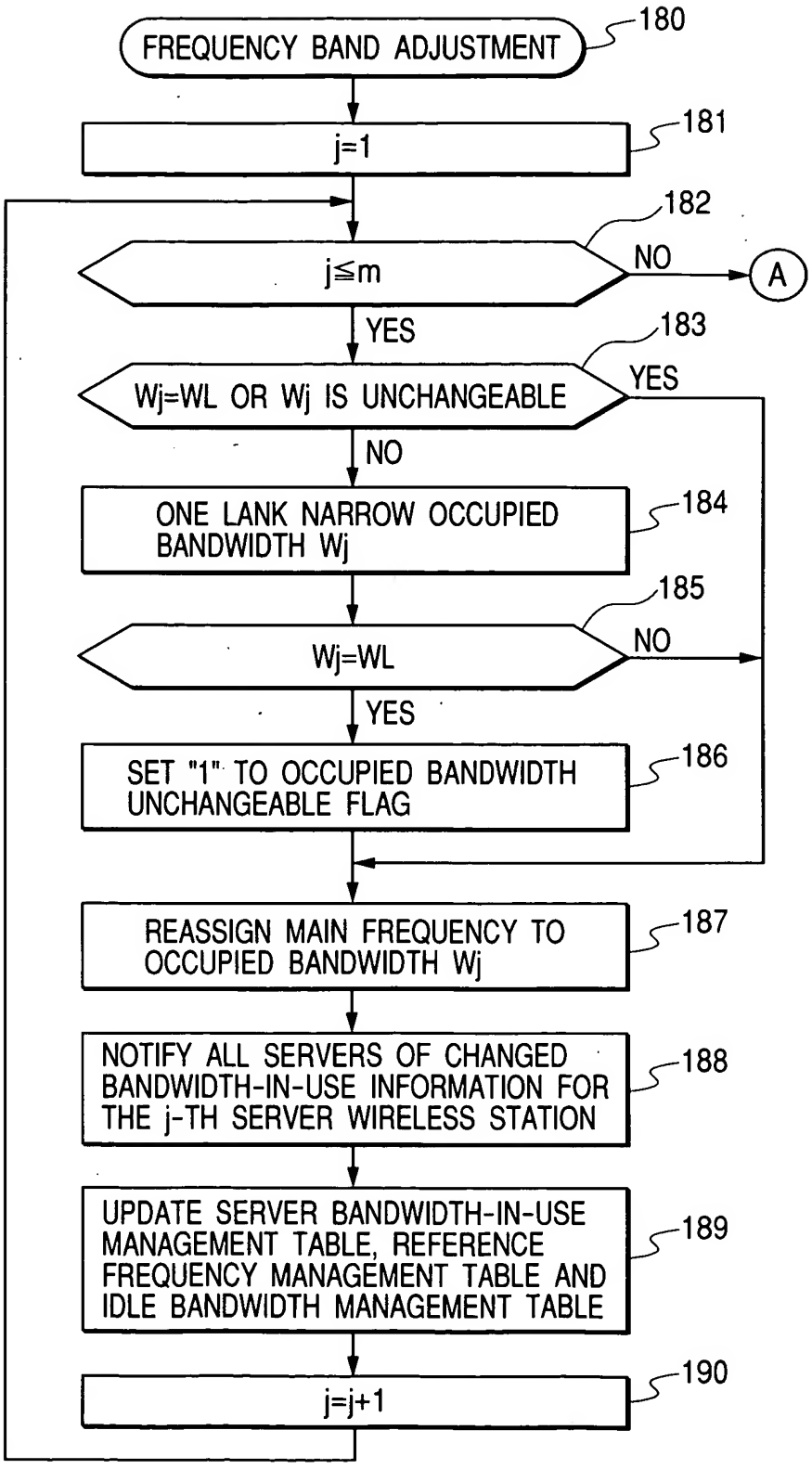

FREQUENCY BAND ADJUSTMENT
180
j=1
181
182
j≦m
NO
A
YES
183
Wj=WL OR Wj IS UNCHANGEABLE
YES
NO
ONE LANK NARROW OCCUPIED BANDWIDTH Wj
184
185
Wj=WL
NO
YES
SET "1" TO OCCUPIED BANDWIDTH UNCHANGEABLE FLAG
186
REASSIGN MAIN FREQUENCY TO OCCUPIED BANDWIDTH Wj
187
NOTIFY ALL SERVERS OF CHANGED BANDWIDTH-IN-USE INFORMATION FOR THE j-TH SERVER WIRELESS STATION
188
UPDATE SERVER BANDWIDTH-IN-USE MANAGEMENT TABLE, REFERENCE FREQUENCY MANAGEMENT TABLE AND IDLE BANDWIDTH MANAGEMENT TABLE
189
j=j+1
190

FIG. 18A

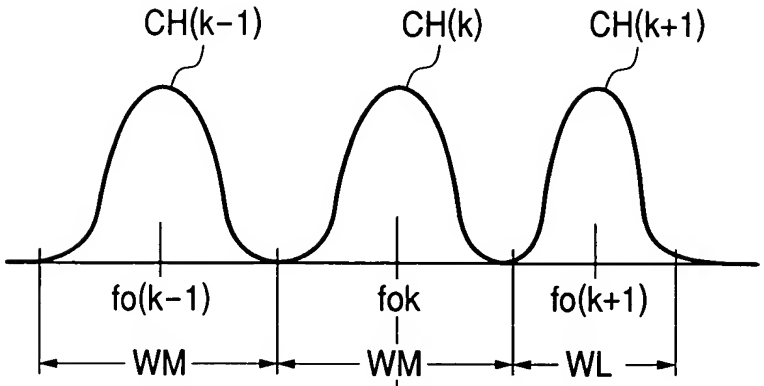


FIG. 18B

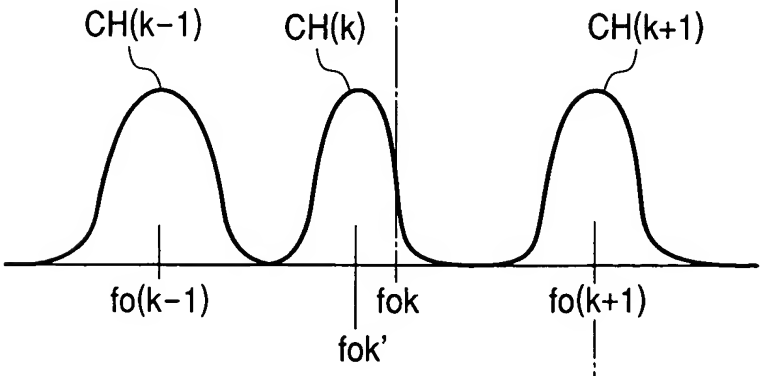


FIG. 18C

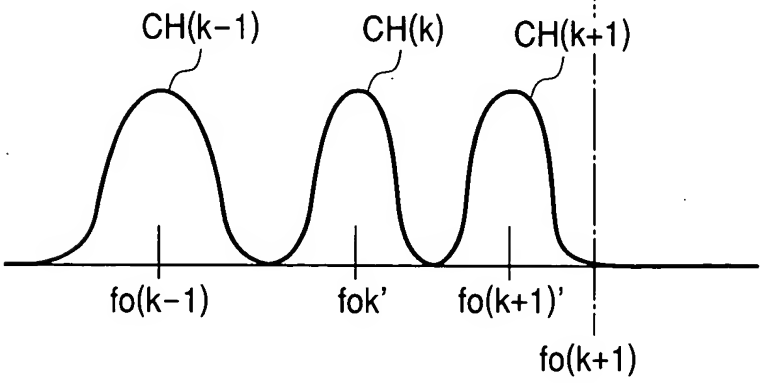


FIG. 19

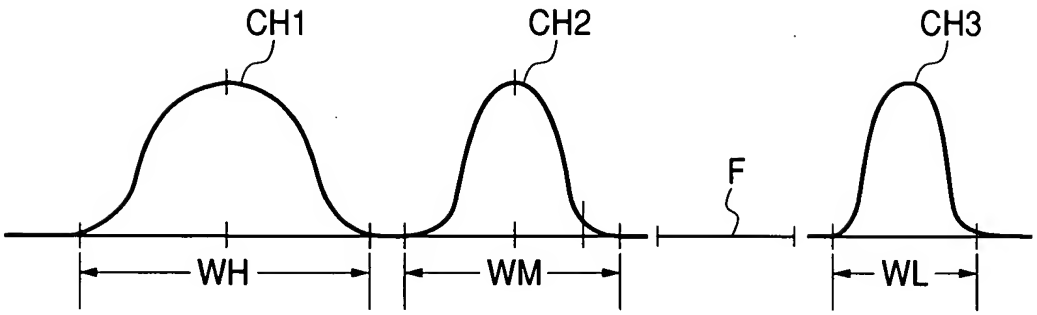

CH1
CH2
CH3
F
WH
WM
WL

FIG. 20

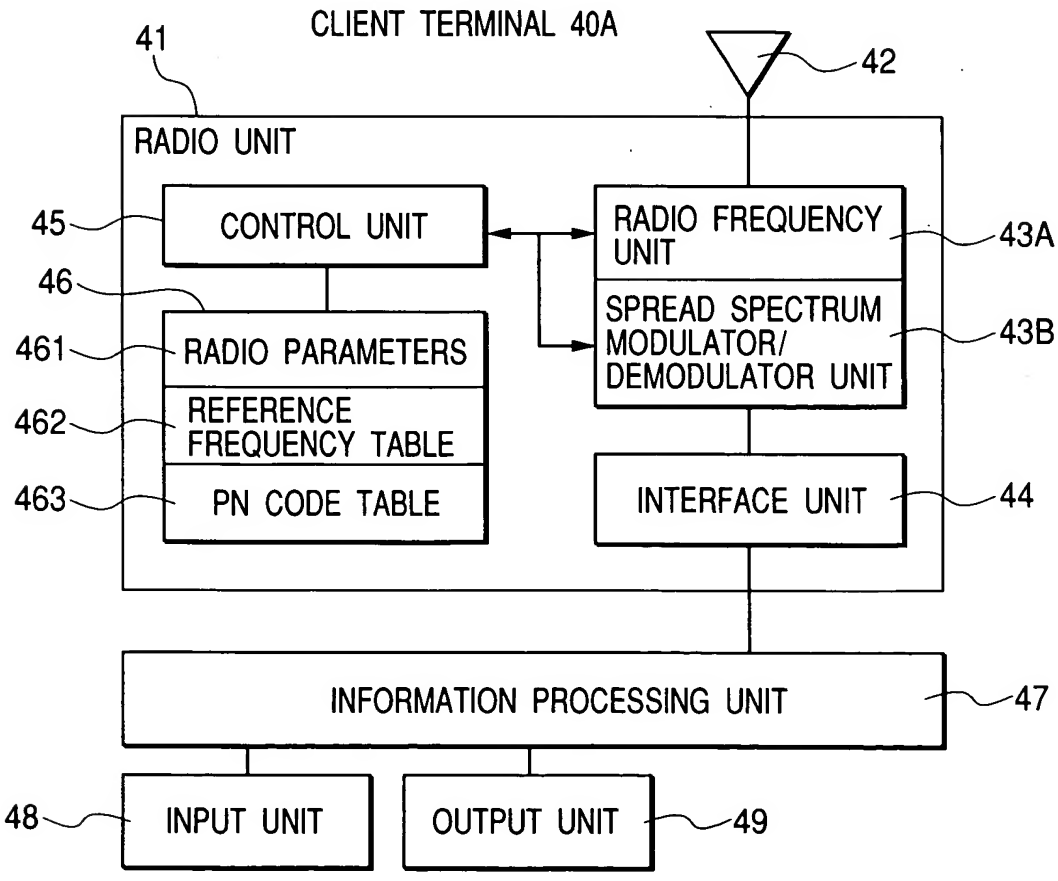
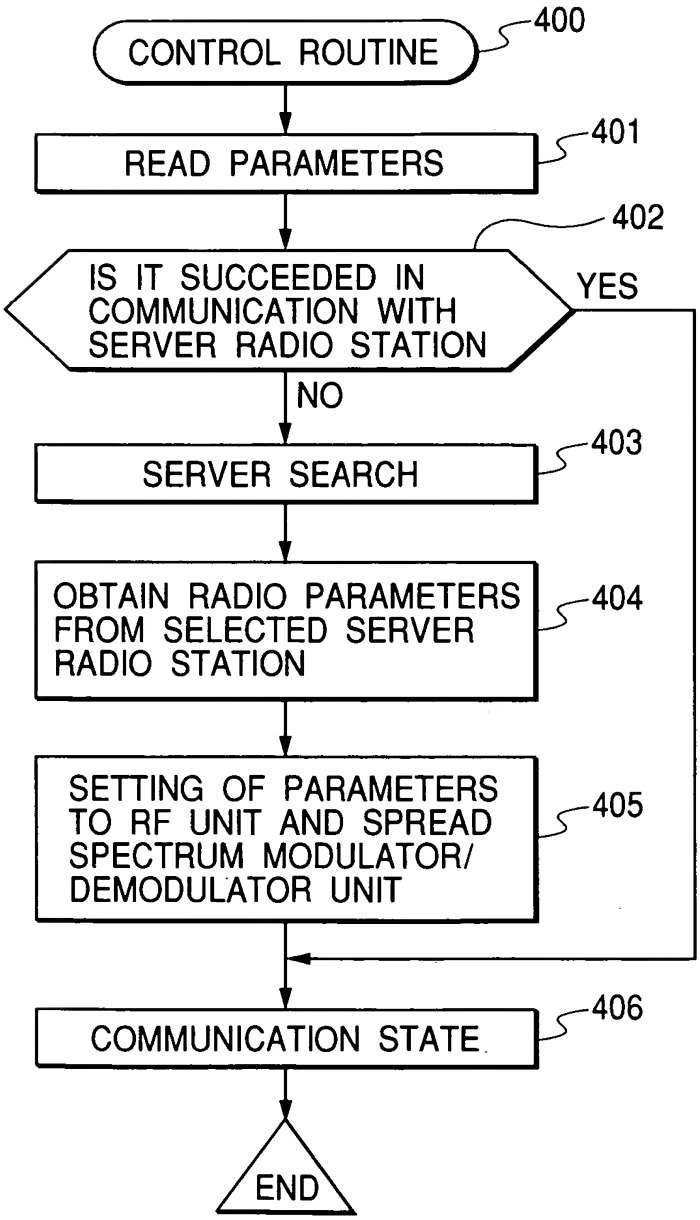

CLIENT TERMINAL 40A
41
42
RADIO UNIT
45
CONTROL UNIT
RADIO FREQUENCY UNIT
43A
46
461
RADIO PARAMETERS
SPREAD SPECTRUM MODULATOR/ DEMODULATOR UNIT
43B
462
REFERENCE FREQUENCY TABLE
463
PN CODE TABLE
INTERFACE UNIT
44
INFORMATION PROCESSING UNIT
47
48
INPUT UNIT
OUTPUT UNIT
49

FIG. 21


CONTROL ROUTINE
400
READ PARAMETERS
401
IS IT SUCCEEDED IN COMMUNICATION WITH SERVER RADIO STATION
402
YES
NO
SERVER SEARCH
403
OBTAIN RADIO PARAMETERS FROM SELECTED SERVER RADIO STATION
404
SETTING OF PARAMETERS TO RF UNIT AND SPREAD SPECTRUM MODULATOR/ DEMODULATOR UNIT
405
COMMUNICATION STATE
406
END